\_\_\_\_\_\_

Sequence Listing was accepted.

If you need help call the Patent Electronic Business Center at (866) 217-9197 (toll free).

Reviewer: Anne Corrigan

Timestamp: [year=2009; month=2; day=19; hr=13; min=38; sec=38; ms=599; ]

\_\_\_\_\_

## Validated By CRFValidator v 1.0.3

Application No: 10584378 Version No: 3.0

Input Set:

Output Set:

**Started:** 2009-02-05 10:41:37.990 **Finished:** 2009-02-05 10:41:40.201

**Elapsed:** 0 hr(s) 0 min(s) 2 sec(s) 211 ms

Total Warnings: 10
Total Errors: 0

No. of SeqIDs Defined: 22

Actual SeqID Count: 22

Error code		Error Description								
W	213	Artificial or	Unknown	found	in	<213>	in	SEQ	ID	(2)
W	213	Artificial or	Unknown	found	in	<213>	in	SEQ	ID	(3)
W	213	Artificial or	Unknown	found	in	<213>	in	SEQ	ID	(4)
W	213	Artificial or	Unknown	found	in	<213>	in	SEQ	ID	(5)
W	213	Artificial or	Unknown	found	in	<213>	in	SEQ	ID	(15)
W	213	Artificial or	Unknown	found	in	<213>	in	SEQ	ID	(17)
W	213	Artificial or	Unknown	found	in	<213>	in	SEQ	ID	(19)
W	213	Artificial or	Unknown	found	in	<213>	in	SEQ	ID	(20)
W	213	Artificial or	Unknown	found	in	<213>	in	SEQ	ID	(21)
W	213	Artificial or	Unknown	found	in	<213>	in	SEQ	ID	(22)

## SEQUENCE LISTING

<110>	Sanofi Pasteur	
<120>	Modified KSA and Uses Thereof	
<130>	API-03-17-PCT-US	
<140>	10584378	
	2009-02-05	
(141)	2007 02 03	
<150>	PCT/US04/42980	
<151>	2004-12-23	
<1 F 0 >	(0.45.30, 0.05	
	60/532,205	
<151>	2003-12-23	
<160>	22	
<170>	PatentIn version 3.3	
<210>	1	
<211>	16	
<212>	PRT	
<213>	Homo sapiens	
<400>	1	
Ser Aro	g Arg His His Cys Arg Ser Lys Ala Lys Arg Ser Arg His His 5 10 15	
<210>	2	
<211>	8210	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	Sense strand of ALVAC donor plasmid shown in Fig. 1	
<400>	2	
gcccttt	tegt etegegegtt teggtgatga eggtgaaaae etetgaeaca tgeageteee	60
ggagac	ggte acagettgte tgtaagegga tgeegggage agacaageee gteagggege :	120
gtcagco	gggt gttggcgggt gtcggggctg gcttaactat gcggcatcag agcagattgt :	180
actgaga	agtg caccatatgc ggtgtgaaat accgcacaga tgcgtaagga gaaaataccg	240
catcag	gege cattegecat teaggetgeg caactgttgg gaagggegat eggtgeggge	300
ctcttcc	gcta ttacgccagc tggcgaaagg gggatgtgct gcaaggcgat taagttgggt	360
	gota transposago tygogaaayy yygatytyot ycaayytyat taayttyyyt .	
aacgcca	aggg ttttcccagt cacgacgttg taaaacgacg gccagtgcca agcttggctg	420
caggtat	ttct aaactaggaa tagatgaaat tatgtgcaaa ggagatacct ttagatatgg	480
caddtat	ttot aaactaggaa tagatgaaat tatgtgcaaa ggagatacot ttagatatgg - (	480
J J	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	-

atctgattta	tttggttttt	cataatcata	atctaacaac	attttcacta	tactatacct	540	
tcttgcacaa	gtcgccatta	gtagtataga	cttatacttt	gtaaccatag	tatactttag	600	
cgcgtcatct	tcttcatcta	aaacagattt	acaacaataa	tcatcgtcgt	catcttcatc	660	
ttcattaaag	ttttcatatt	caataacttt	cttttctaaa	acatcatctg	aatcaataaa	720	
catagaacgg	tatagagcgt	taatctccat	tgtaaaatat	actaacgcgt	tgctcatgat	780	
gtacttttt	tcattattta	gaaattatgc	attttagatc	tttataagcg	gccgtgatta	840	
actagtcata	aaaacccggg	atcgattcta	gactcgagat	aaaaactata	tcagagcaac	900	
cccaaccagc	actccaatca	tgatgccgac	agtggcccca	gctgagagac	caggagaagt	960	
tccagatgca	gagactgtga	tgctcttgac	tatggaatta	ttgcggccag	tagccaagtt	1020	
agagacaaaa	caggcatagg	tcccgttatt	atttggcgtg	attttggcga	taaagagaac	1080	
ttgtgtgtgt	tgctgcggta	tcccattgat	acgccaagaa	tactgcgggg	atgggttaga	1140	
ggccgagtgg	caggagaggt	tgaggtccgc	tcccgaaagg	taagacgagt	ctggggggga	1200	
aatgatgggg	gtgtccggcc	catagaggac	atccagggtg	actgggtcac	tgcggtttgc	1260	
actcactgag	ttctggattc	cacatacata	ggctcttgcg	tcatttcttg	tgacattgaa	1320	
tagagtgagg	gtcctgttgc	cattggacag	ctgcagcctg	ggactgactg	ggaggctctg	1380	
accatttacc	caccacaggt	aggttgtgtt	ctgagcctca	ggttcacagg	tgaaggccac	1440	
agcatccttg	tcctccacgg	gtttggagtt	gttgctggag	atggagggct	tgggcagete	1500	
cgcggaaaca	gttattgttt	taactgtagt	cctgctgtga	ccactggctg	agttattggc	1560	
ctggcaagta	tagagtccgc	tgttcttctc	agttatgttg	cttataaata	actcttgagt	1620	
atgctgctga	atgtttccat	caatcagcca	ggagtactgt	gcaggggggt	tggatgctgc	1680	
atggcaagaa	aggctcaagt	tcacgccggg	acggtagtag	gtgtatgatg	gagatatagt	1740	
tgggtcgtct	gggccataca	aaacattaag	gataacaggg	tcggagtgat	caacggataa	1800	
ttcattctga	atgccacact	cataaggtcc	tacatcattg	cgagtaacgg	acaggagtgt	1860	
caatgtgcgg	ttatcattag	acaactgcaa	gcgtgggcta	accggcaaac	tttggttatt	1920	
gacccaccat	aaataagtgg	tattttgaat	ctctggctca	caagttaatg	caactgcgtc	1980	
ctcatcctca	actgggttag	aattgttact	agttatgaat	ggttttggtg	gctcatacac	2040	
ggtaatcgtc	gtcacggttg	tgcggttgag	tccggtgtcg	ctattgtgag	cttggcacgt	2100	
gtaggatcca	ctattgttca	cggtaatatt	gggaatgaac	agttcctggg	tggactgttg	2160	

gaaagtgcca ttgacaaacc	agctgtattg	ggcgggagga	ttgctagcgg	catgacagct	2220
cagattcaga ttttcccctg	atctatagct	tgtgtttaga	gggctgattg	taggagcatc	2280
gggtccgtaa agcacgttga	gaatcactga	atcagacctc	ctggcgctga	ctggattttg	2340
ggtttcgcat ttgtagcttg	ctgtgtcgtt	cctggtcacg	ttaaacaggg	tcagagttct	2400
atttccgttg ctgagttgga	gtctagggga	cacaggcagg	gactggttgt	tcacccacca	2460
gagatatgtt gcgtcttgag	tttcgggctc	gcatgtaaaa	gcgacggcat	ctttgtcttc	2520
gacaggetta etattattgg	agctaataga	aggcttaggg	agttccgggt	atacccggaa	2580
ctggccagtt gcttcttcat	tcacaagatc	tgactttatg	acgtgtaggg	tgtagaatcc	2640
tgtgtcattc tggatgatgt	tctggatcag	cagggatgca	ttggggtata	ttatctctcg	2700
accactgtat gcgggccctg	gggtagcttg	ttgagttcct	attacatatc	ctataatttg	2760
acggttgcca tccactcttt	cacctttgta	ccagctgtag	ccaaaaagat	gctggggcag	2820
attgtggaca agtagaagca	cctccttccc	ctctgcgaca	ttgaacggcg	tggattcaat	2880
agtgagettg geagtggtgg	gcgggttcca	gaaggttaga	agtgaggctg	tgagcaggag	2940
cctctgccag gggatgcacc	atctgtgggg	aggggccgag	ggagactcca	ttatttatat	3000
tccaaaaaaa aaaaataaaa	tttcaatttt	tgtcgacctg	cagctcgacg	gatccccccg	3060
ggttctttat tctatactta	aaaagtgaaa	ataaatacaa	aggttcttga	gggttgtgtt	3120
aaattgaaag cgagaaataa	tcataaatta	tttcattatc	gcgatatccg	ttaagtttgt	3180
atcgtaatgg aggagccgca	gtcagatcct	agcgtcgagc	cccctctgag	tcaggaaaca	3240
ttttcagacc tatggaaact	acttcctgaa	aacaacgttc	tgtccccctt	gccgtcccaa	3300
gcaatggatg atttgatgct	gtccccggac	gatattgaac	aatggttcac	tgaagaccca	3360
ggtccagatg aagctcccag	aatgccagag	gctgctcccc	ccgtggcccc	tgcaccagca	3420
gctcctacac cggcggcccc	tgcaccagcc	ccctcctggc	ccctgtcatc	ttctgtccct	3480
tcccagaaaa cctaccaggg	cagctacggt	ttccgtctgg	gcttcttgca	ttctgggaca	3540
gccaagtctg tgacttgcac	gtactcccct	gccctcaaca	agatgttttg	ccaactggcc	3600
aagacctgcc ctgtgcagct	gtgggttgat	tccacacccc	cgcccggcac	ccgcgtccgc	3660
gccatggcca tctacaagca	gtcacagcac	atgacggagg	ttgtgaggcg	ctgccccac	3720
catgageget geteagatag	cgatggtctg	gcccctcctc	agcatcttat	ccgagtggaa	3780
ggaaatttgc gtgtggagta	tttggatgac	agaaacactt	ttcgacatag	tgtggtggtg	3840
ccctatgagc cgcctgaggt	tggctctgac	tgtaccacca	tccactacaa	ctacatgtgt	3900

aacagttcct	gcatgggcgg	catgaaccgg	aggcccatcc	tcaccatcat	cacactggaa	3960
gactccagtg	gtaatctact	gggacggaac	agctttgagg	tgcgtgtttg	tgcctgtcct	4020
gggagagacc	ggcgcacaga	ggaagagaat	ctccgcaaga	aaggggagcc	tcaccacgag	4080
ctgccccag	ggagcactaa	gcgagcactg	cccaacaaca	ccagctcctc	tccccagcca	4140
aagaagaaac	cactggatgg	agaatatttc	acccttcaga	tccgtgggcg	tgagcgcttc	4200
gagatgttcc	gagagctgaa	tgaggccttg	gaactcaagg	atgcccaggc	tgggaaggag	4260
ccagggggga	gcagggctca	ctccagccac	ctgaagtcca	aaaagggtca	gtctacctcc	4320
cgccataaaa	aactcatgtt	caagacagaa	gggcctgact	cagactgaac	gcgtttttta	4380
tcccgggctc	gagggtaccg	gatccttttt	atagctaatt	agtcacgtac	ctttgagagt	4440
accacttcag	ctacctcttt	tgtgtctcag	agtaactttc	tttaatcaat	tccaaaacag	4500
tatatgattt	tccatttctt	tcaaagatgt	agtttacatc	tgctcctttg	ttgaaaagta	4560
gcctgagcac	ttcttttcta	ccatgaatta	cagctggcaa	gatcaatttt	tcccagttct	4620
ggacatttta	tttttttaa	gtagtgtgct	acatatttca	atatttccag	attgtacagc	4680
gatcattaaa	ggagtacgtc	ccatgttatc	cagcaagtca	gtatcagcac	ctttgttcaa	4740
tagaagttta	accattgtta	aatttttatt	tgatacggct	atatgtagag	gagttaaccg	4800
atccgtgttt	gaaatatcta	catccgccga	atgagccaat	agaagtttaa	ccaaattaac	4860
tttgttaagg	taagctgcca	aacacaaagg	agtaaagcct	ccgctgtaaa	gaacattgtt	4920
tacatagtta	ttcttcaaca	gatctttcac	tattttgtag	tcgtctctca	acaccgcatc	4980
atgcagacaa	gaagttgtgc	attcagtaac	tacaggttta	gctccatacc	tcatcaagat	5040
ttttatagcc	tcggtattct	tgaacattac	agccatttca	agaggagatt	gtagagtacc	5100
atattccgtg	ttagggtcga	atccattgtc	caaaaaccta	tttagagatg	cattgtcatt	5160
atccatgata	gcctcacaga	cgtatatgta	agccatcttg	aatgtataat	tttgttgttt	5220
tcaacaaccg	ctcgtgaaca	gcttctatac	tttttcattt	tcttcatgat	taatatagtt	5280
tacggaatat	aagtatacaa	aaagtttata	gtaatctcat	aatatctgaa	acacatacat	5340
aaaacatgga	agaattacac	gatgtcgttg	agataaatgg	ctttttattg	tcatagttta	5400
caaattcgca	gtaatcttca	tcttttacga	atattgcaga	atctgtttta	tccaaccagt	5460
gatttttgta	taatataact	ggtatcctat	cttccgatag	aatgctgtta	tttaacattt	5520
ttacacctat	taaqttaqat	ctatassta	catctttcca	actgacttta	tataacaata	5580

ttgcacctat taagttacat ctgtcaaatc catctttcca actgacttta tgtaacgatg

5580

cgaaatagca tttatcacta	tgtcgtaccc	aattatcatg	acaagattct	cttaaatacg	5640
taatcttatt atctcttgca	tattcgtaat	agtaattgta	aagagtatac	gataacagta	5700
tagatataca cgtgatataa	atatttaacc	ccattcctga	gtaaaataat	tacgatatta	5760
catttccttt tattatttt	atgttttagt	tatttgttag	gttatacaaa	aattatgttt	5820
atttgtgtat atttaaagcg	tcgttaagaa	taagcttagt	taacatatta	tegettaggt	5880
tttgtagtat ttgaatcctt	tctttaaatg	gattattttt	ccaatgcata	tttatagctt	5940
catccaaagt ataacattta	acattcagaa	ttgeggeege	aattcaattc	gtaatcatgg	6000
tcatagetgt tteetgtgtg	aaattgttat	ccgctcacaa	ttccacacaa	catacgagcc	6060
ggaagcataa agtgtaaagc	ctggggtgcc	taatgagtga	gctaactcac	attaattgcg	6120
ttgcgctcac tgcccgcttt	ccagtcggga	aacctgtcgt	gccagctgca	ttaatgaatc	6180
ggccaacgcg cggggagagg	cggtttgcgt	attgggcgct	cttccgcttc	ctcgctcact	6240
gactcgctgc gctcggtcgt	teggetgegg	cgagcggtat	cagctcactc	aaaggcggta	6300
atacggttat ccacagaatc	aggggataac	gcaggaaaga	acatgtgagc	aaaaggccag	6360
caaaaggcca ggaaccgtaa	aaaggccgcg	ttgctggcgt	ttttccatag	gctccgcccc	6420
cctgacgagc atcacaaaaa	tegaegetea	agtcagaggt	ggcgaaaccc	gacaggacta	6480
taaagatacc aggcgtttcc	ccctggaagc	tccctcgtgc	gctctcctgt	teegaeeetg	6540
ccgcttaccg gatacctgtc	cgcctttctc	ccttcgggaa	gcgtggcgct	ttctcatagc	6600
tcacgctgta ggtatctcag	ttcggtgtag	gtcgttcgct	ccaagctggg	ctgtgtgcac	6660
gaaccccccg ttcagcccga	ccgctgcgcc	ttatccggta	actatcgtct	tgagtccaac	6720
ccggtaagac acgacttatc	gccactggca	gcagccactg	gtaacaggat	tagcagagcg	6780
aggtatgtag gcggtgctac	agagttettg	aagtggtggc	ctaactacgg	ctacactaga	6840
aggacagtat ttggtatctg	cgctctgctg	aagccagtta	ccttcggaaa	aagagttggt	6900
agctcttgat ccggcaaaca	aaccaccgct	ggtagcggtg	gtttttttgt	ttgcaagcag	6960
cagattacgc gcagaaaaaa	aggatctcaa	gaagatcctt	tgatcttttc	tacggggtct	7020
gacgctcagt ggaacgaaaa	ctcacgttaa	gggattttgg	tcatgagatt	atcaaaaagg	7080
atcttcacct agatcctttt	aaattaaaaa	tgaagtttta	aatcaatcta	aagtatatat	7140
gagtaaactt ggtctgacag	ttaccaatgc	ttaatcagtg	aggcacctat	ctcagcgatc	7200
tgtctatttc gttcatccat	agttgcctga	ctccccgtcg	tgtagataac	tacgatacgg	7260
gagggettae catetggeee	cagtgctgca	atgataccgc	gagacccacg	ctcaccggct	7320

ccagatttat	cagcaataaa	ccagccagcc	ggaagggccg	agcgcagaag	tggtcctgca	7380
actttatccg	cctccatcca	gtctattaat	tgttgccggg	aagctagagt	aagtagttcg	7440
ccagttaata	gtttgcgcaa	cgttgttgcc	attgctacag	gcatcgtggt	gtcacgctcg	7500
tcgtttggta	tggcttcatt	cagctccggt	tcccaacgat	caaggcgagt	tacatgatcc	7560
cccatgttgt	gcaaaaaagc	ggttagctcc	ttcggtcctc	cgatcgttgt	cagaagtaag	7620
ttggccgcag	tgttatcact	catggttatg	gcagcactgc	ataattctct	tactgtcatg	7680
ccatccgtaa	gatgcttttc	tgtgactggt	gagtactcaa	ccaagtcatt	ctgagaatag	7740
tgtatgcggc	gaccgagttg	ctcttgcccg	gcgtcaatac	gggataatac	cgcgccacat	7800
agcagaactt	taaaagtgct	catcattgga	aaacgttctt	cggggcgaaa	actctcaagg	7860
atcttaccgc	tgttgagatc	cagttcgatg	taacccactc	gtgcacccaa	ctgatcttca	7920
gcatctttta	ctttcaccag	cgtttctggg	tgagcaaaaa	caggaaggca	aaatgccgca	7980
aaaaagggaa	taagggcgac	acggaaatgt	tgaatactca	tactcttcct	ttttcaatat	8040
tattgaagca	tttatcaggg	ttattgtctc	atgagcggat	acatatttga	atgtatttag	8100
aaaaataaac	aaataggggt	tccgcgcaca	tttccccgaa	aagtgccacc	tgacgtctaa	8160
gaaaccatta	ttatcatgac	attaacctat	aaaaataggc	gtatcacgag		8210

<210> 3

<211> 8210

<212> DNA

<213> Artificial Sequence

<220>

<223> Anti-sense strand of ALVAC donor plasmid shown in Fig. 1

<400> 3

cgggaaagca gagcgcgaa agccactact gccacttttg gagactgtgt acgtcgaggg 60
cctctgccag tgtcgaacag acattcgcct acggccctcg tctgttcggg cagtcccgcg 120
cagtcgcca caaccgccca cagccccgac cgaattgata cgccgtagtc tcgtctaaca 180
tgactctcac gtggtatacg ccacacttta tggcgtgtct acgcattcct cttttatggc 240
gtagtccgcg gtaagcggta agtccgacgc gttgacaacc cttcccgcta gccacgcccg 300
gagaagcgat aatgcggtcg accgctttcc ccctacacga cgttccgcta attcaaccca 360
ttgcggtccc aaaagggtca gtgctgcaac attttgctgc cggtcacggt tcgaaccgac 420
gtccataaga tttgatcctt atctactta atacacgttt cctctatgga aatctatacc 480

tagactaaat aaaccaaaaa	gtattagtat	tagattgttg	taaaagtgat	atgatatgga	540
agaacgtgtt cagcggtaat	catcatatct	gaatatgaaa	cattggtatc	atatgaaatc	600
gcgcagtaga agaagtagat	tttgtctaaa	tgttgttatt	agtagcagca	gtagaagtag	660
aagtaatttc aaaagtataa	gttattgaaa	gaaaagattt	tgtagtagac	ttagttattt	720
gtatettgee atatetegea	attagaggta	acattttata	tgattgcgca	acgagtacta	780
catgaaaaaa agtaataaat	ctttaatacg	taaaatctag	aaatattcgc	cggcactaat	840
tgatcagtat ttttgggccc	tagctaagat	ctgagctcta	tttttgatat	agtctcgttg	900
gggttggtcg tgaggttagt	actacggctg	tcaccggggt	cgactctctg	gtcctcttca	960
aggtctacgt ctctgacact	acgagaactg	ataccttaat	aacgccggtc	atcggttcaa	1020
tctctgtttt gtccgtatcc	agggcaataa	taaaccgcac	taaaaccgct	atttctcttg	1080
aacacacaca acgacgccat	agggtaacta	tgcggttctt	atgacgcccc	tacccaatct	1140
ccggctcacc gtcctctcca	actccaggcg	agggctttcc	attctgctca	gaccccccct	1200
ttactacccc cacaggccgg	gtatctcctg	taggtcccac	tgacccagtg	acgccaaacg	1260
tgagtgactc aagacctaag	gtgtatgtat	ccgagaacgc	agtaaagaac	actgtaactt	1320
atctcactcc caggacaacg	gtaacctgtc	gacgtcggac	cctgactgac	cctccgagac	1380
tggtaaatgg gtggtgtcca	tccaacacaa	gactcggagt	ccaagtgtcc	acttccggtg	1440
tcgtaggaac aggaggtgcc	caaacctcaa	caacgacctc	tacctcccga	acccgtcgag	1500
gcgcctttgt caataacaaa	attgacatca	ggacgacact	ggtgaccgac	tcaataaccg	1560
gaccgttcat atctcaggcg	acaagaagag	tcaatacaac	gaatatttat	tgagaactca	1620
tacgacgact tacaaaggta	gttagtcggt	cctcatgaca	cgtccccca	acctacgacg	1680
taccgttctt tccgagttca	agtgcggccc	tgccatcatc	cacatactac	ctctatatca	1740
acccagcaga cccggtatgt	tttgtaattc	ctattgtccc	agcctcacta	gttgcctatt	1800
aagtaagact tacggtgtga	gtattccagg	atgtagtaac	gctcattgcc	tgtcctcaca	1860
gttacacgcc aatagtaatc	tgttgacgtt	cgcacccgat	tggccgtttg	aaaccaataa	1920
ctgggtggta tttattcacc	ataaaactta	gagaccgagt	gttcaattac	gttgacgcag	1980
gagtaggagt tgacccaatc	ttaacaatga	tcaatactta	ccaaaaccac	cgagtatgtg	2040
ccattagcag cagtgccaac	acgccaactc	aggccacagc	gataacactc	gaaccgtgca	2100
catcctaggt gataacaagt	gccattataa	cccttacttg	tcaaggaccc	acctgacaac	2160
ctttcacggt aactgtttgg	tcgacataac	ccgccctcct	aacgatcgcc	gtactgtcga	2220

gtctaagtct	aaaaggggac	tagatatcga	acacaaatct	cccgactaac	atcctcgtag	2280
cccaggcatt	tcgtgcaact	cttagtgact	tagtctggag	gaccgcgact	gacctaaaac	2340
ccaaagcgta	aacatcgaac	gacacagcaa	ggaccagtgc	aatttgtccc	agtctcaaga	2400
taaaggcaac	gactcaacct	cagatcccct	gtgtccgtcc	ctgaccaaca	agtgggtggt	2460
ctctatacaa	cgcagaactc	aaagcccgag	cgtacatttt	cgctgccgta	gaaacagaag	2520
ctgtccgaat	gataataacc	tcgattatct	tccgaatccc	tcaaggccca	tatgggcctt	2580
gaccggtcaa	cgaagaagta	agtgttctag	actgaaatac	tgcacatccc	acatcttagg	2640
acacagtaag	acctactaca	agacctagtc	gtccctacgt	aaccccatat	aatagagagc	2700
tggtgacata	cgcccgggac	cccatcgaac	aactcaagga	taatgtatag	gatattaaac	2760
tgccaacggt	aggtgagaaa	gtggaaacat	ggtcgacatc	ggtttttcta	cgaccccgtc	2820
taacacctgt	tcatcttcgt	ggaggaaggg	gagacgctgt	aacttgccgc	acctaagtta	2880
tcactcgaac	cgtcaccacc	cgcccaaggt	cttccaatct	tcactccgac	actcgtcctc	2940
ggagacggtc	ccctacgtgg	tagacacccc	tccccggctc	cctctgaggt	aataaatata	3000
aggtttttt	ttttattt	aaagttaaaa	acagctggac	gtcgagctgc	ctaggggggc	3060
ccaagaaata	agatatgaat	ttttcacttt	tatttatgtt	tccaagaact	cccaacacaa	3120
tttaactttc	gctctttatt	agtatttaat	aaagtaatag	cgctataggc	aattcaaaca	3180
tagcattacc	tcctcggcgt	cagtctagga	tegeageteg	ggggagactc	agtcctttgt	3240
aaaagtctgg	atacctttga	tgaaggactt	ttgttgcaag	acagggggaa	cggcagggtt	3300
cgttacctac	taaactacga	caggggcctg	ctataacttg	ttaccaagtg	acttctgggt	3360
ccaggtctac	ttcgagggtc	ttacggtctc	cgacgagggg	ggcaccgggg	acgtggtcgt	3420
cgaggatgtg	gccgccgggg	acgtggtcgg	gggaggaccg	gggacagtag	aagacaggga	3480
agggtctttt	ggatggtccc	gtcgatgcca	aaggcagacc	cgaagaacgt	aagaccctgt	3540
cggttcagac	actgaacgtg	catgagggga	cgggagttgt	tctacaaaac	ggttgaccgg	3600
ttctggacgg	gacacgtcga	cacccaacta	aggtgtgggg	gegggeegtg	ggcgcaggcg	3660
cggtaccggt	agatgttcgt	cagtgtcgtg	tactgcctcc	aacactccgc	gacgggggtg	3720
gtactcgcga	cgagtctatc	gctaccagac	cggggaggag	tcgtagaata	ggctcacctt	3780
cctttaaacg	cacacctcat	aaacctactg	tctttgtgaa	aagctgtatc	acaccaccac	3840

gggatactcg gcggactcca accgagactg acatggtggt aggtgatgtt gatgtacaca

3900

ttgtcaagga	cgtacccgcc	gtacttggcc	tccgggtagg	agtggtagta	gtgtgacctt	3960
ctgaggtcac	cattagatga	ccctgccttg	tcgaaactcc	acgcacaaac	acggacagga	4020
ccctctctgg	ccgcgtgtct	ccttctctta	gaggcgttct	tteccctegg	agtggtgctc	4080
gacgggggtc	cctcgtgatt	cgctcgtgac	gggttgttgt	ggtcgaggag	aggggtcggt	4140
ttcttctttg	gtgacctacc	tcttataaag	tgggaagtct	aggcacccgc	actcgcgaag	4200
ctctacaagg	ctctcgactt	actccggaac	cttgagttcc	tacgggtccg	accetteete	4260
ggtcccccct	cgtcccgagt	gaggtcggtg	gacttcaggt	ttttcccagt	cagatggagg	4320
gcggtatttt	ttgagtacaa	gttctgtctt	cccggactga	gtctgacttg	cgcaaaaaat	4380
agggcccgag	ctcccatggc	ctaggaaaaa	tatcgattaa	tcagtgcatg	gaaactctca	4440
tggtgaagtc	gatggagaaa	acacagagtc	tcattgaaag	aaattagtta	aggttttgtc	4500
atatactaaa	aggtaaagaa	agtttctaca	tcaaatgtag	acgaggaaac	aacttttcat	4560
cggactcgtg	aagaaaagat	ggtacttaat	gtcgaccgtt	ctagttaaaa	agggtcaaga	4620
cctgtaaaat	aaaaaaaatt	catcacacga	tgtataaagt	tataaaggtc	taacatgtcg	4680
ctagtaattt	cctcatgcag	ggtacaatag	gtcgttcagt	catagtcgtg	gaaacaagtt	4740
atcttcaaat	tggtaacaat	ttaaaaataa	actatgccga	tatacatctc	ctcaattggc	4800
taggcacaaa	ctttatagat	gtaggcggct	tactcggtta	tcttcaaatt	ggtttaattg	4860
aaacaattcc	attcgacggt	ttgtgtttcc	tcatttcgga	ggcgacattt	cttgtaacaa	4920
atgtatcaat	aagaagttgt	ctagaaagtg	ataaaacatc	agcagagagt	tgtggcgtag	4980
tacgtctgtt	cttcaacacg	taagtcattg	atgtccaaat	cgaggtatgg	agtagttcta	5040
aaaatatcgg	agccataaga	acttgtaatg	tcggtaaagt	tctcctctaa	catctcatgg	5100

tataaggcac aatcccagct taggtaacag gttt